# Synergia Update 03/06/03

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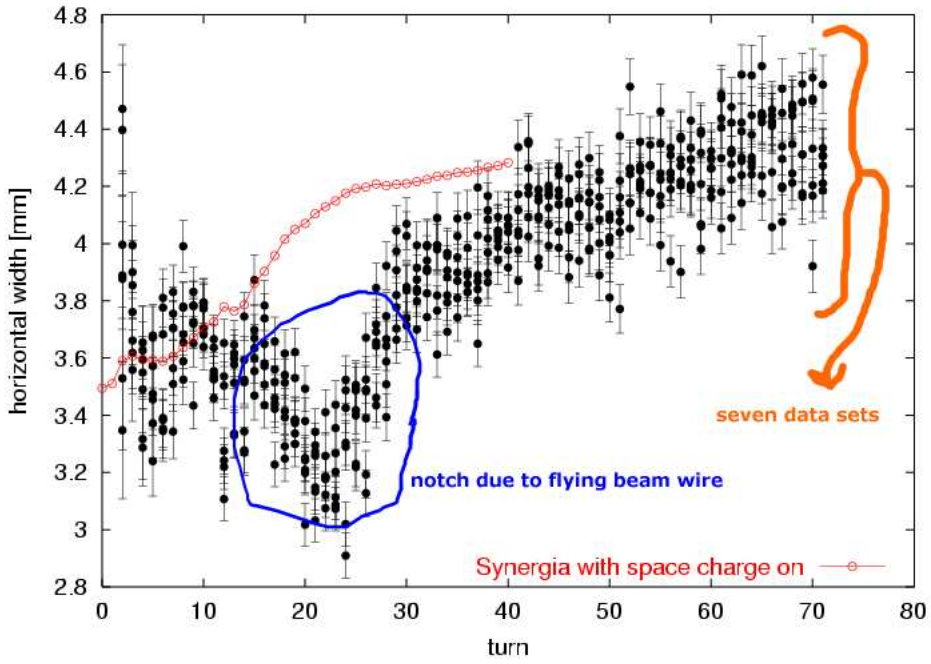
## 1 Summary

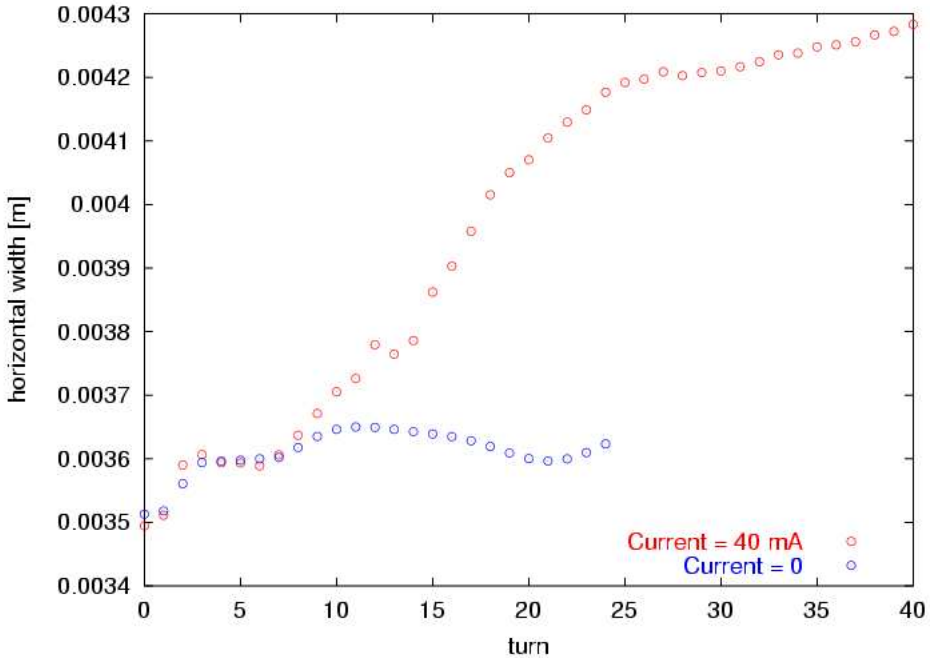
- RF recently added
  - need to fix memory leak
  - not relevant for today's results
- Horizontal width results
  - comparison w/ data
  - effect of space charge
- Halo
- Comparison of IMPACT (Synergia) SC w/ 2D model

## 2 Horizontal width comparison with data



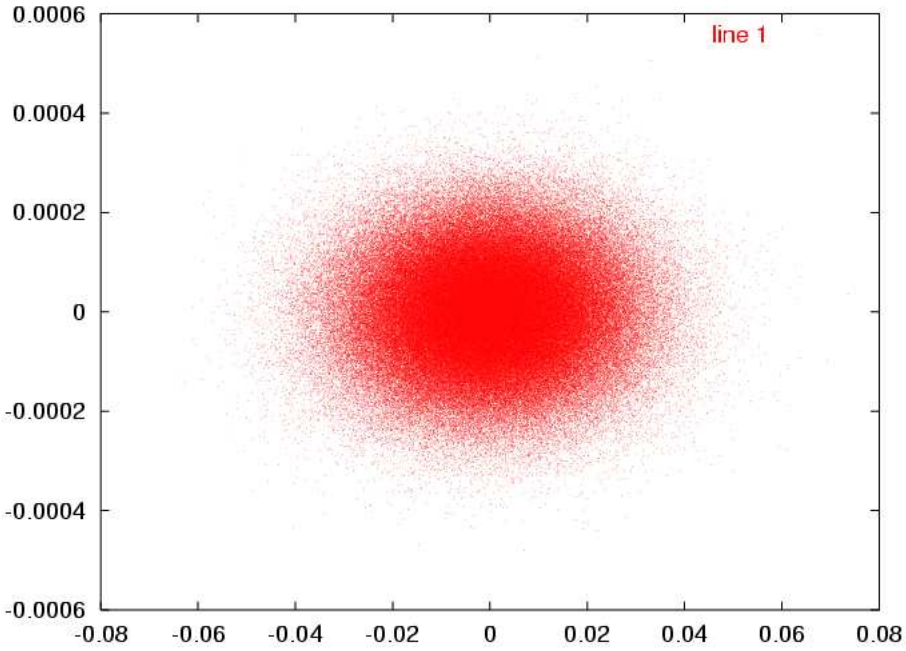

## 3 Horizontal width simulation with space charge vs simulation without space charge

The nonzero current is 40 mA/turn, for 11 turns, giving a total of 440 mA.

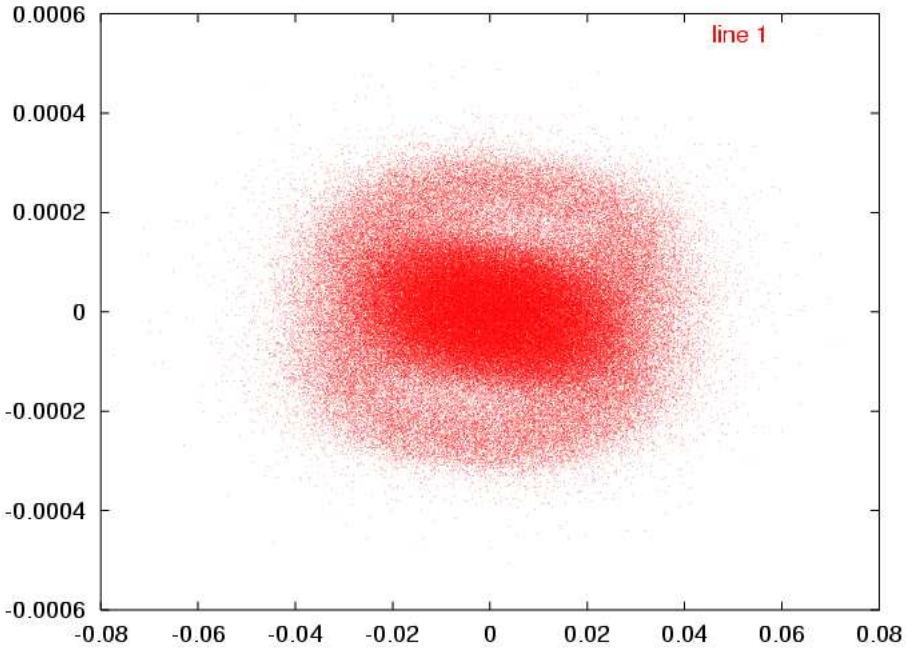



# 4 Halo

Below: plot of x vs x' *without* space charge. The units are IMPACT internal units.




Below: plot of x vs x' *with* space charge. The units are IMPACT internal units.



# 5 Input Parameters

- <x> = 3.5 mm
- <x'> = (match using linear lattice)
- <y> = (assume equal emittance in x and y)
- <y'> = (match using linear lattice)
- $\frac{\Delta p}{p}$= from fit done to RWM data = $3 \times 10^{-4}$
- current = 40 mA/turn. 11 turns injected.